

Amendments to the Claims

This listing of claims will replace all prior versions and listings of claims in the application:

Listing of Claims

Claim 1 (Currently Amended): A motor comprising:

a magnet which has a cylindrical shape and is divided into N in the circumferential direction so as to be magnetized to different poles alternately;

a rotor shaft which is formed of a soft magnetic material and is fixed in the inside diameter portion of said magnet;

a first coil which is adjacent to the rotor shaft and is arranged adjacently to said magnet in the axial direction of said rotor shaft;

a first outside magnetic pole portion which is excited by said first coil, is inserted on the inner periphery side of said first coil, and is arranged so as to be opposed to a predetermined angle range of the outer peripheral surface of said magnet with a predetermined gap being provided between said first outside magnetic pole portion and the outer peripheral surface of said magnet;

a second coil which is adjacent to the rotor shaft and is arranged on almost the same plane as said first coil so as to be adjacent to said magnet in the axial direction of said rotor shaft; and

a second outside magnetic pole portion which is excited by said second coil, is inserted on the inner periphery side of said second coil, and is arranged so as to be opposed to a predetermined angle range of the outer peripheral surface of said magnet with a predetermined

gap being provided between said second outside magnetic pole portion and the outer peripheral surface of said magnet,

said rotor shaft comprises a first inside magnetic pole portion which is energized by the first coil and a second inside magnetic pole portion which is energized by the second coil.

Claim 2 (Original): The motor according to claim 1, wherein said first outside magnetic pole portion and said second outside magnetic pole portion are formed of a same member.

Claim 3 (Original): The motor according to claim 1, wherein said first outside magnetic pole portion and said second outside magnetic pole portion are formed into a comb teeth shape extending in the axial direction of said rotor shaft and in the same direction.

Claim 4 (Original): The motor according to claim 1, wherein the excitation of said first coil and said second coil is switched at different timing.

Claim 5 (Original): The motor according to claim 1, wherein an angle θ between said first outside magnetic pole portion and said second outside magnetic pole portion with the rotation center of said rotor shaft being the reference is $\theta = (180 - 180/N)$ degree.